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Making the Case for Public Health: Estimating ROI and Value

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Why ROI?

- Do outcomes achieved by public health interventions justify their costs?
- Where should new investments be directed to achieve their greatest impact?

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Related questions of value…

- How much health can we produce through public health investments?
- Can public health investments help "bend the curve" to contain medical costs?

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ROI Uncertainty and Controversy

THE WALL STREET JOURNAL.
WSJ.com

JUNE 12, 2009

Prevention Efforts Provide No Panacea on Health Costs

By JANET ADAMY

Preventing Chronic Disease: An Important Investment, But Don't Count On Cost Savings

An overwhelming percentage of preventive interventions add more to medical costs than they save.

HEALTH AFFAIRS - *Volume 28, Number 1*

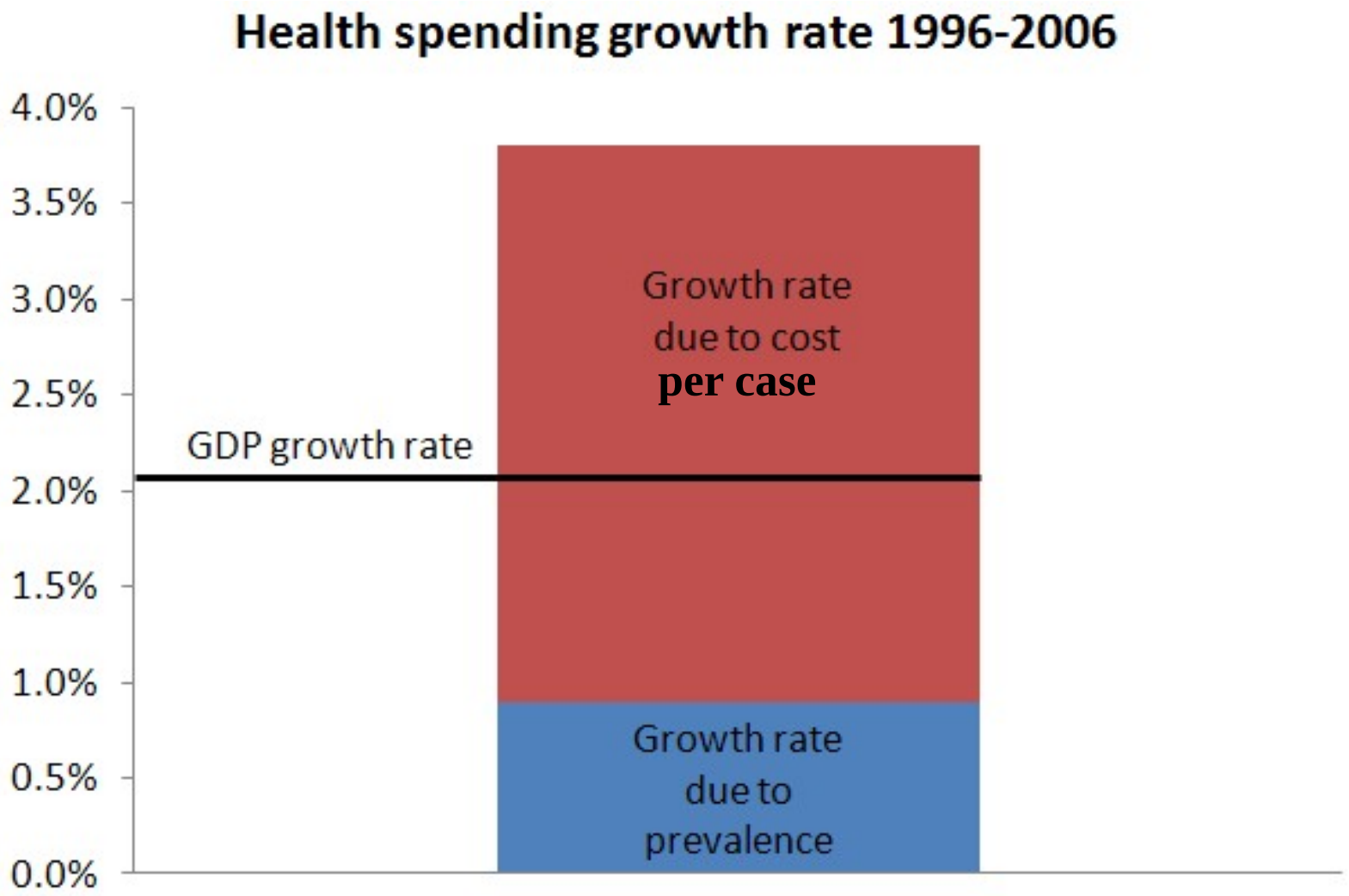
by Louise B. Russell

Prevention for a Healthier America:

INVESTMENTS IN DISEASE PREVENTION YIELD SIGNIFICANT SAVINGS, STRONGER COMMUNITIES

Trust for America's Health
WWW.HEALTHYAMERICANS.ORG

Public health spending and medical costs



Roehrig et al. Health Affairs 2011

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Challenges in demonstrating ROI in public health

- Time lag between costs and benefits
- Distribution of costs and benefits: *concentrated* costs but *diffuse* benefits
- Measurement of costs and benefits requires good information systems
- Attribution of benefits: the counterfactual

ROI Key Ingredients

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Investments

- Costs of implementing public health interventions
- Who's investments?

Returns

- Valuation of the outputs and outcomes attributable to public health interventions
- Who realizes returns?
- Over what time frames?
- Compared to what?

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Managing ROI Expectations

- **Cost savings** – a high bar
- **Cost effectiveness** – value for dollars spent
  - Compared to status quo
  - Compared to other possible investments
  - Compared to doing nothing

…Key concept: opportunity costs

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Estimating ROI in public health: Key Considerations

Perspective

- Federal, state, health system, or societal?

Time Horizon

- How long can you wait to realize returns?

Types of Interventions

- Primary, secondary or tertiary prevention
- Cross-cutting infrastructure

Estimating ROI in public health: Key Considerations - Costs

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Direct costs

- Cost of implementing intervention/infrastructure
- Cost savings attributable to the intervention

Indirect costs

- Economic value of productivity gains/losses or time savings/costs attributable to the intervention

Estimating ROI in public health: Key Considerations - Benefits

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Efficiency gains (captured in cost measures)

- Reduced labor costs
- Reduced material costs

Productivity gains (captured in output measures)

- Services delivered
- Cases detected

Revenue gains (captured in financial measures)

Health gains (captured in outcome measures)

- Deaths averted
- Cases prevented
- Quality-adjusted life years gained

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Estimating ROI in public health: Key Considerations

Break even

- How long does it take to recoup investment?

Maintenance/Persistence

- How long do the benefits last?
- Recurring costs?

Achieving ROI in public health: Key Considerations

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- **Economies of scale**: many public health interventions can be delivered more efficiently across larger populations
- **Economies of scope**: efficiencies can be realized by using the same infrastructure to deliver an array of related programs and services

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Estimating ROI in public health: Types of Analyses

- Macro-level analysis
- Infrastructure-level analysis
- Intervention-level analysis
- Process-level analysis

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Estimating ROI in public health: Macro-level Analysis

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NATIONAL RETURN ON INVESTMENT OF $10 PER PERSON (Net Savings in 2004 dollars)			
	1-2 Years	5 Years	10-20 Years
U.S. Total	$2,848,000,000	$16,543,000,000	$18,451,000,000
ROI	0.96:1	5.6:1	6.2:1

Source: Trust for America's Health, 2009

Estimating ROI in public health: Intervention-level Analysis

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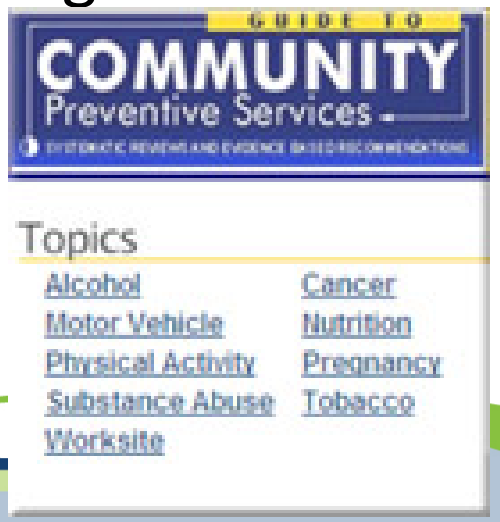
- Smoking cessation interventions cost an estimated $2,587 for each life-year gained
- $1 spent on STD and pregnancy prevention produces $2.65 in medical cost savings
- $1 spent on preconception care for diabetic women produces $5.19 in medical cost savings
- $1 spent on childhood immunization produces $6.30 in medical cost savings



Source: Centers for Disease Control and Prevention 2008

Mortality reductions attributable to local public health spending, 1993-2008

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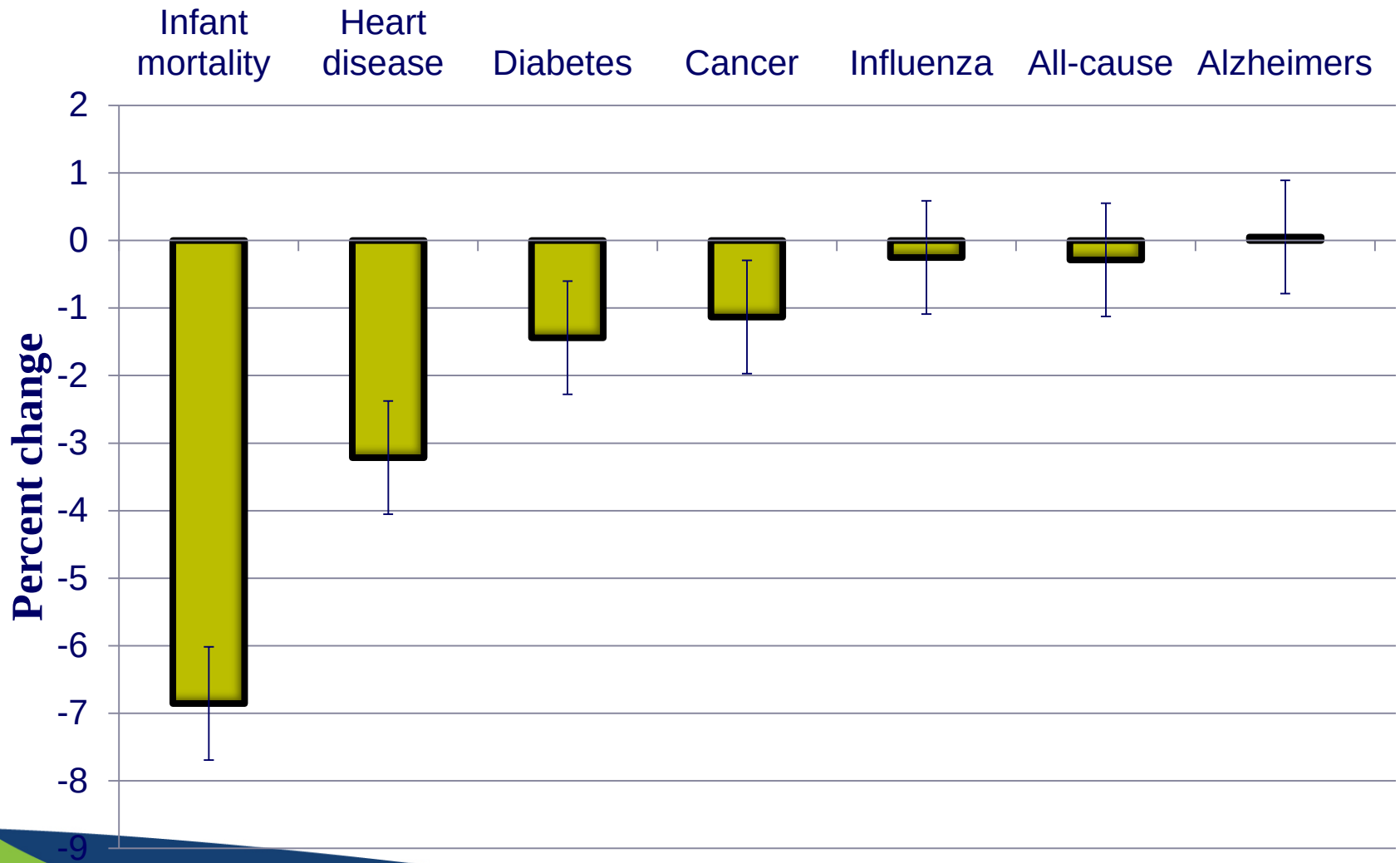

Mays et al. Health Affairs, 2011

Medical Care Offsets Attributable to Local Public Health Spending, 1993-2008

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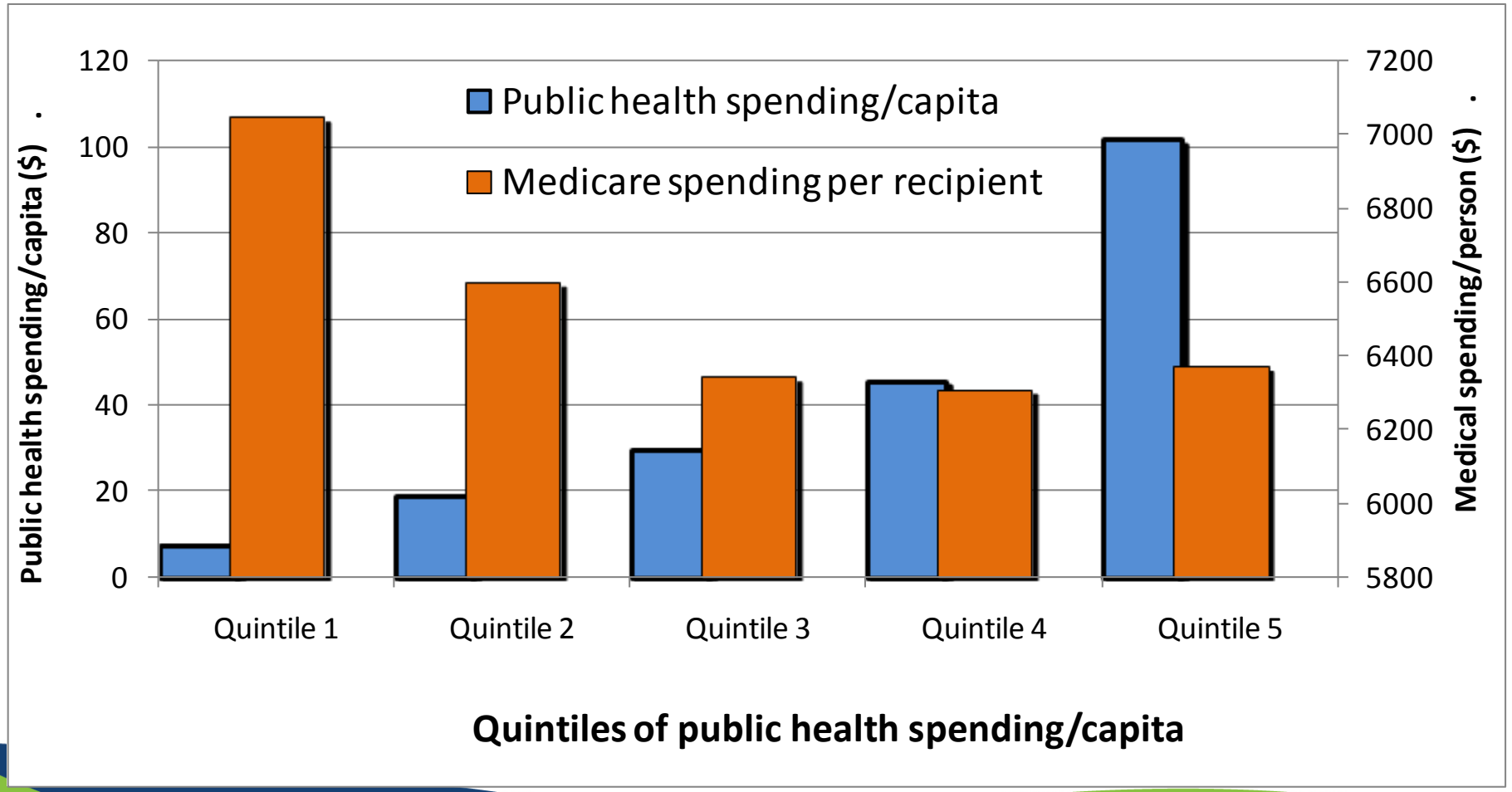
Medical Cost Offset = 0.088%



Mays et al. Health Services Research, 2009

Projected effects of new ACA public health spending

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- 1.2% increase in public health spending in average community over 10 years:

Public health cost	$7.2M
Medical cost offset	-$6.3M (Medicare only)
Deaths averted	175.8
Life years gained	1758
Net cost/LY	$546

Mays et al. forthcoming 2012

Preventable disease burden and national health spending

>75% of national health spending is attributable to chronic diseases that are largely preventable

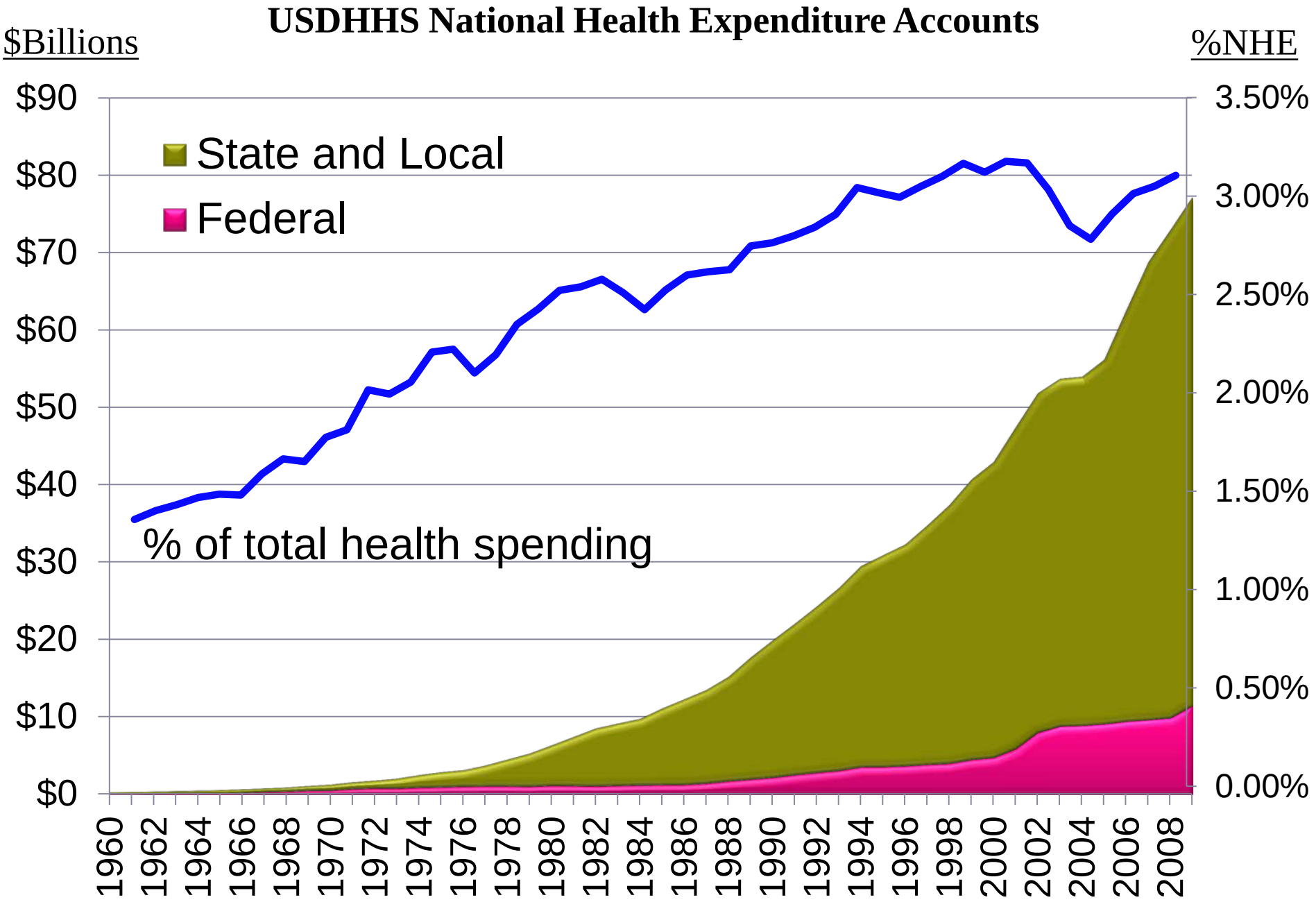
- 80% of cardiovascular disease
- 80% of diabetes
- 60% of lung diseases
- 40% of cancers

(not counting injuries, vaccine-preventable diseases)

<3% of national health spending is allocated to public health and prevention

CDC 2011

Public health's share of national health spending



Public Health in the Affordable Care Act

- Public Health & Prevention Fund: $15 billion in new federal public health spending over 10 years (cut by $5B this year)
- Incentives for hospitals, health insurers, employers to invest in public health and prevention

Implications for Policy and Practice

- Mortality reductions achievable through increases in public health spending may equal or exceed the reductions produced by similar expansions in local medical care resources
- Increased public health investments help to reduce geographic disparities in population health and bend the medical cost curve
- Gains from increased federal investments may be offset by reductions in state and local spending

Advancing ROI Analysis in Public Health

- Enhanced tracking of public health expenditures
- Enhanced monitoring of program performance
  - Reach/targeting
  - Effectiveness
  - Efficiency
  - Equity
- Analysis of cross-cutting infrastructure needed to implement/maintain programs

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